AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Currently Amended) A process to prepare nanostructured materials comprising:

generating a plasma using a free-burning electric arc;

introducing an oxidizing gas into the plasma before the plasma is expanded into a field free zone;

injecting a precursor material into the plasma before the plasma is expanded into a field free zone through at least one of a current carrying region of an anodic column and a current carrying region of a cathodic column;

transferring energy from the plasma to the precursor material and forming at least one of a stoichiometric-nanostructured material and a vapor that may be condensed to form a stoichiometric-nanostructured material in the plasma before the plasma is expanded into a field free zone; and

recovering the stoichiometric-nanostructured material;

wherein the stoichiometric-nanostructured material is an oxide.

3. (Previously Presented) The process of claim 2, wherein the injecting comprises injecting the precursor material into the current carrying region of the cathodic column through forced convection.

4. (Cancelled).

5. (Previously Presented) The process of claim 2, wherein the introducing comprises introducing the oxidizing gas into the current carrying region of the anodic column of the free-burning electric arc.

6. (Previously Presented) The process of claim 2, further comprising injecting at least one of a quench and dilution stream into the plasma.

7-8. (Cancelled).

9. (New) The process of claim 2, wherein the oxidizing gas comprises N_2O, O_2 or CO_2.

10. (New) The process of claim 2, wherein the oxidizing gas comprises O_2.

11. (New) The process of claim 2, wherein the stoichiometric-nanostructured material is a metal oxide selected from the group consisting of aluminum oxide, zinc oxide, iron oxide, cerium oxide, chromium oxide, antimony tin oxide, mixed rare earth oxides and indium tin oxide.

12. (New) The process of claim 2, wherein the stoichiometric-nanostructured material is antimony tin oxide.

13. (New) The process of claim 2, wherein the stoichiometric-nanostructured material has a surface chemistry with a zeta potential having an absolute value greater than 20 mV.

14. (New) A process to prepare nanostructured materials comprising:

generating a plasma using a transferred electric arc;

introducing an oxidizing gas into the plasma before the plasma is expanded into a field free zone;

injecting a precursor material into the plasma before the plasma is expanded into a field free zone through at least one of a current carrying region of an anodic column and a current carrying region of a cathodic column;

transferring energy from the plasma to the precursor material and forming at least one of a stoichiometric-nanostructured material and a vapor that may be condensed to form a stoichiometric-nanostructured material in the plasma before the plasma is expanded into a field free zone; and

recovering the stoichiometric-nanostructured material;

wherein the stoichiometric-nanostructured material is an oxide.

15. (New) The process of claim 14, wherein the injecting comprises injecting the precursor material into the current carrying region of the cathodic column through forced convection.

16. (New) The process of claim 14, wherein the introducing comprises introducing the oxidizing gas into the current carrying region of the anodic column of the transferred electric arc.

17. (New) The process of claim 14, further comprising injecting at least one of a quench and dilution stream into the plasma.

18. (New) The process of claim 14, wherein the oxidizing gas comprises N_2O, O_2 or CO_2.

19. (New) The process of claim 14, wherein the oxidizing gas comprises O_2.

20. (New) The process of claim 14, wherein the stoichiometric-nanostructured material is a metal oxide selected from the group consisting of aluminum oxide, zinc oxide, iron oxide, cerium oxide, chromium oxide, antimony tin oxide, mixed rare earth oxides and indium tin oxide.

21. (New) The process of claim 14, wherein the stoichiometric-nanostructured material is antimony tin oxide.

22. (New) The process of claim 14, wherein the stoichiometric-nanostructured material has a surface chemistry with a zeta potential having an absolute value greater than 20 mV.